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Philippine Basidiomycetes—III

PAUL W. GRAFF*

(WITH PLATE 15)

A large number of basidiomycetous fungi have been added from time to time to those known from the Philippine Islands and, as opportunity has offered, numerous tropical species described by different botanists have been checked. The result is that, with the extension of our knowledge, many ranges have been extended, and not a few supposedly distinct species have proven to be identical. The confusion of names has, to a considerable extent, been due to a failure to compare authentically named specimens from the larger museums and herbaria and to a slight and possibly unconscious tendency to limit species distribution with geographic boundaries. A brief review of the synonymy in the following pages, in company with a comparison of named specimens, will show the value of a comparative study of species from various localities, and the need for a continuation of such studies. Extensive studies should also be made of material from Japan, Formosa, China, the Malay States, Borneo, Java, Celebes, New Guinea and Australia. This would bring to light many interesting facts regarding little-known species. Likewise, a comparative study of material from these localities with fungi collected in other more distant and less related tropical countries would probably broaden many views regarding the localization of fungal distribution. For example, *Auricularia mesenterica* (Dicks.) Fr. is also of common occurrence in the American tropics and southern Europe; *Corticium caeruleum* (Schrad.) Fr. is found in North America, southern Europe and northern Africa; and *Pleurotus flabellatus* Berk. & Br. has been collected in tropical America, Ceylon, and South Africa, as well as in the Philippines.

The material in the following list of fungi was collected on the islands of Luzon, Mindoro, Polillo, Leyte, Negros, Culion, and

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Mindanao. All of the collections cited are preserved in the herbarium of the Bureau of Science, Manila. The preceding parts of this series have been published in the Philippine Journal of Science (**8**: Bot. 299–307. 1913; **9**: Bot. 235–254. 1914).

USTILAGINEAE

USTILAGO Persoon

USTILAGO ANDROPOGONIS-ACICULATI Petch, Ann. Roy. Bot. Gard. Perad. **4**: 303. 1909.

LUZON: Manila, May, 1910, *Merrill 7070*, on *Andropogon aciculatus* Retz.

Originally described from material collected on the same host at Peradeniya, Ceylon.

USTILAGO EMODENSIS Berk. Jour. Bot. & Kew Gard. Misc. **3**: 202. 1851.

LUZON: Subprovince of Benguet, December, 1906, *Mearns*, on *Polygonum chinense* L.

Described from material in Hooker's Sikkim-Himalayan collection from Tonglo, at an elevation of 3,300 m. The species is closely related to *U. Candollei.*

USTILAGO KOORDERSIANA Bref. Unters. Mykol. **12**: 132. *pl. 8, f. 5, 6.* 1895.

NEGROS: Cabacalan, March, 1910, *Merrill 6766*, on *Polygonum barbatum* L.

Originally described on the same host from Java.

USTILAGO PANICI MILIACEI (Pers.) Wint.; Rabenhorst, Krypt.-Fl. **1**^{1}: 89. 1884.

Uredo (*Ustilago*) *segetum* var. *Panici miliacei* Pers. Syn. Fung. 224. 1801.

Uredo carbo var. *Panici miliacei* DC. Fl. Franç. **6**: 76. 1815.

Caeoma destruens Schlecht. Fl. Berol. **2**: 130. 1824.

Uredo destruens Duby, Bot. Gall. ed. 2. **2**: 901. 1830.

Erysibe Panicorum Wallr. Fl. Crypt. Germ. **2**: 216. 1833.

Ustilago carbo var. *destruens* Tul. Ann. Sci. Nat. Bot. III. **7**: 81. 1847.

Tilletia destruens Lév. Ann. Sci. Nat. Bot. III. **8**: 372. 1848.

Ustilago destruens Schlecht.; Rabenhorst, Herb. Myc. Nov. *400*.

MINDANAO: District of Cotobato, Cotobato, May 8, 1904, *E. B. Copeland, Bur. Sci. 1349*, on *Panicum* sp.

Previously reported from North and South America and southern Europe. Probably of very general distribution.

USTILAGO TONKINENSIS (P. Henn.) Sacc. Syll. Fung. **11**: 232. 1895.

Uredo tonkinensis P. Henn. Hedwigia **34**: 11. 1895.

LUZON: Province of Rizal, Caloocan, November 20, 1909, *C. B. Robinson, Bur. Sci. 9554*, on *Ischaemum aristatum* var. *gibbum*.

Collected previously in the vicinity of Hanöi, French Indo-China, parasitic on *Andropogon* sp.

CINTRACTIA Cornu

CINTRACTIA LEUCODERMA (Berk.) P. Henn. Hedwigia **34**: 335. 1895.

Ustilago leucoderma Berk. Ann. Mag. Nat. Hist. II. **9**: 200. 1852.

Cintractia Krugiana Magn. Bot. Jahrb. **17**: 490. 1893.

Cintractia affinis Peck, N. Y. State Mus. Bull. **67**: 28. 1903.

MINDANAO: District of Davao, Lake Lanao, Camp Keithley, September, 1907, *Mary S. Clemens*, on *Rynchospora glauca* Vahl; District of Zamboanga, November–December, 1911, *Merrill 8322*, on *Rynchospora aurea* Vahl.

Reported from the southern portion of the United States, the West Indies, Mexico, Brazil, and Borneo.

USTILAGINOIDEA Brefeld

USTILAGINOIDEA VIRENS (Cooke) Tak. Bot. Mag. Tokyo **10**: 19. 1896.

Ustilago virens Cooke, Grevillea **7**: 15. 1878.

Ustilaginoidea Oryzae Bref. Unters. Mykol. **12**: 194. 1895.

Tilletia Oryzae Pat. Bull. Soc. Myc. Fr. **13**: 124. 1897.

LUZON: vicinity of Manila, *P. W. Graff;* Province of Laguna, Santa Rosa, December, 1912, *P. W. Graff*, on *Oryza sativa* L.

This fungus is a common parasite on rice and is found in most of the rice-growing districts of India, Japan, the Philippines, and Malaya.

PUCCINEAE

HAMASPORA Koernicke

HAMASPORA ACUTISSIMA Syd. Monogr. Ured. **3**: 80. 1912.

LUZON: Province of Benguet, Pauai, June, 1909, *R. C. McGregor, Bur. Sci. 8510a*, at an altitude of about 2,100 m.; Province of Tayabas, Mount Banjao, March, 1907, *F. W. Foxworthy, Bur. Sci. 2399a*. NEGROS: Canlaon Volcano, April, 1910, *Merrill 222a*. The host plant of the three collections is *Rubus Rolfei* Vidal.

The species has also been reported on *Rubus moluccanus* L., collected in Java and Australia.

PUCCINIA Persoon

PUCCINIA HYPTIDIS (M. A. Curt.) Tracy & Earle, Bull. Miss. Agr. Exp. Sta. 34: 86. 1895.

Uredo Hyptidis M. A. Curt. Amer. Jour. Sci. **2**: 6. 1820.

Uredo Ciberti Speg. Anal. Soc. Cien. Arg. **9**: 15. 1880.

Puccinia Ciberti Speg. Anal. Mus. Nat. Buenos Aires II. **6**: 220. 1899.

Aecidium Hyptidis P. Henn. Hedwigia **34**: 337. 1895.

Aecidium tucumanense Speg. Anal. Mus. Nat. Buenos Aires III. **9**: 35. 1908.

MINDANAO: District of Davao, Davao, March 21, 1904, *Copeland 595*, on *Hyptis spicigera* Lam. (*Uredo* stage).

Previously collected in the southern portion of the United States and the tropical and temperate portions of South America.

PHRAGMIDIUM Link

PHRAGMIDIUM SUBCORTICIUM (Schrank) Wint.; Rabenhorst, Krypt.-Fl. **1**^{1}: 228. 1881.

Lycoperdon subcorticium Schrank, Bot. Tasch. Hoppe 68. 1793.

Uredo miniata var. *Eglanteriae* Pers. Syn. Fung. 216. 1801.

Uredo elevata Schum. Enum. Pl. Sael. **2**: 229. 1803.

Aecidium Rosae Röhling, Deuts. Fl. ed. 2. **3**: 122. 1813.

Uredo Eglanteriae H. Mart. Fl. Mosq. ed. 2. 230. 1817.

Caeoma miniatum Schlecht. Fl. Berol. **2**: 120. 1824.

Caeoma Rosae var. *miniatum* Link; Willd. Sp. Pl. **6**^{2}: 30. 1825.

Erysibe miniata var. *Rosarum* Wallr. Fl. Crypt. Germ. **2**: 200. 1833.

Coleosporium miniatum Bon. Gatt. Coniom. 60, in part. 1860.

Phragmidium Rosarum f. *R. pimpinellifoliae* Rabenh. Fungi Eur. *1671* (hyponym). 1873.

Phragmidium Rosae pimpinellifoliae Diet. Hedwigia **44**: 339. 1905.

Caeoma exitiosum Syd. Ured. 1700 (hyponym). 1913.

LUZON: Subprovince of Benguet, Baguio, June 10, 1913, *J. C. Wagner, Bur. Sci. 21002.*

This species is of wide distribution, having been reported from North America, Europe, Africa and Australia. It is probable that the fungus was introduced into the Philippines with either European or American cultivated rose stock.

AURICULAREAE

AURICULARIA Bulliard

AURICULARIA LOBATA Sommerf.; Fries, Elench. Fung. **2**: 34. 1828.

LUZON: Province of Rizal, Antipolo, October, 1912, *M. Ramos, Bur. Sci. S76.*

Previously collected on the River Niger, Africa.

AURICULARIA MESENTERICA (Dicks.) Fr. Epicr. Myc. 555. 1838.

Helvella mesenterica Dicks. Plant. Crypt. **1**: 20. 1785.

Auricularia tremelloides Bull. Hist. Champ. Fr. 278. *pl. 290.* 1791–1798.

Auricularia violacea Bull. Hist. Champ. Fr. 278. 1791–1798

Thelephora mesenterica Pers. Syn. Fung. 571. 1808.

Thelephora purpurea Pers. Syn. Fung. 571. 1808.

Auricularia corrugata Sowerb. Engl. Fungi *pl. 290.* 1797–1815.

Auricularia ornata Pers.; Gaudichaud, Bot. Voy. Uranie 177. *pl. 2, f. 4.* 1826.

Phlebia mesenterica Fr. Elench. Fung. **1**: 154. 1828.

Oncomyces mesentericus Klotz. Linnaea **7**: 195. 1832.

LUZON: Province of Rizal, January 16, 1906, *F. W. Foxworthy, Bur. Sci. 121;* same locality, February, 1911, *M. Ramos, Bur. Sci*

12552. MINDANAO: District of Davao, Davao, April, 1904, *Copeland "F."*

Of common occurrence in the American and European tropics.

AURICULARIA RUGOSISSIMA (Lév.) Bres. Hedwigia **53**: 78. 1912.

Phlebia rugosissima Lév. Ann. Sci. Nat. Bot. III. **2**: 214. 1844.

Phlebia reflexa Berk. Jour. Bot. & Kew Gard. Misc. **3**: 16. 1851.

MINDORO: Mount Halcon, November, 1905, *Merrill 6118.* NEGROS: Gimagaan River, January, 1904,. *Copeland 25.*

Previously collected in the West Indies and northern India.

HIRNEOLA Fries

HIRNEOLA AFFINIS (Jungh.) Bres. Annal. Myc. **8**: 587. 1910.

Merulius affinis Jungh. Fl. Crypt. Java 76. 1838.

Laschia velutina Lév. Ann. Sci. Nat. Bot. III. **2**: 217. 1844.

LUZON: Province of Laguna, Mount Maquiling, February, 1912, *P. W. Graff, Bur. Sci. 15934.*

Originally described from material collected in Java. This fungus has also been reported from Japan.

HIRNEOLA AMPLA (Pers.) Fr. Fungi Nat. 26. 1848.

Auricularia ampla Pers.; Gaudichaud, Bot. Voy. Uranie 77. 1826.

Exidia nobilis Lév. Ann. Sci. Nat. Bot. III. **2**: 218. 1844.

Exidia ampla Lév. Ann. Sci. Nat. Bot. III. **5**: 159. 1846.

Hirneola nobilis Fr. Fungi Nat. 26. 1848.

LUZON: vicinity of Manila, February, 1904, *Copeland 41*, on *Gliricidia maculata* H.B.K. NEGROS: Gimagaan River, January, 1904, *Copeland 30*, on *Dipterocarpus* sp.

Reported previously from Japan and Natal.

HIRNEOLA AURICULA-JUDAE (Fr.) Berk. Outl. Brit. Fung. 289. 1860; Fr. Hym. Eur. 695. 1874.

Tremella auricula L. Sp. Pl. 1157. 1753.

Merulius auricula Roth, Tent. Flor. Germ. **1**: 535. 1788.

Peziza auricula L. Syst. Veg. ed. 13. 1018. 1789.

Tremella auriformis Hoffm. Veg. Crypt. **2**: 31. *pl. 6, f. 4.* 1790.

Tremella caragana Pers. Syn. Met. Fung. 625. 1808.

Auricularia sambucina Mart. Fl. Crypt. Erlang. 459. 1817.

Exidia auricula-judae Fr. Syst. Myc. **2**: 221. 1822.

Auricularia auricula Underw. Mem. Torrey Club **12**: 15. 1902.

LUZON: Province of Rizal, Bosoboso, July, 1906, *M. Ramos, Bur. Sci. 1185*, on *Gliricidia maculata.*

Reported from southern Europe, Guiana, Japan, and the East Indies.

HIRNEOLA TENUIS (Lév.) Fr. Fungi Nat. 27. 1848.

Exidia tenuis Lév. Ann. Sci. Nat. Bot. III. **2**: 219. 1844.

LUZON: Province of Isabela, Cordon, May 8, 1909, *M. Ramos, Bur. Sci. 8135.*

Previously collected in Natal, Borneo and Brazil.

THELEPHOREAE

CORTICIUM Persoon

CORTICIUM CAERULEUM (Schrad.) Fr. Epicr. Myc. 562. 1838.

Thelephora caerulea Schrad. Spicil. Fl. Germ. 187. 1794.

Thelephora fimbriata Roth, Catal. Bot. **2**. *pl. 9, f. 2.* 1800.

Auricularia phosphorea Sowerb. Engl. Fungi *pl. 350.* 1797–1815.

Thelephora indigo Schwein. Schr. Nat. Ges. Leipzig **1**: 107. 1822.

Merisma fimbriata Schwein. Schr. Nat. Ges. Leipzig **1**: 110. 1822.

Thelephora atro-caerulea Trog, Flora **15**: 560. 1832.

MINDORO: Mount Halcon, November, 1906, *Merrill 5545*, on decaying tree branches, host plant undetermined.

Previously collected in North America, southern Europe and northern Africa.

HYMENOCHAETE Léveillé

HYMENOCHAETE ADUSTA (Lév.) Bres. Hedwigia **51**: 323. 1912.

Stereum adustum Lév. Ann. Sci. Nat. Bot. III. **2**: 213. 1844.

Thelephora adusta Lév.; Gaudichaud, Bot. Voy. Bonite 192. *pl. 139, f. 2.* 1846.

MINDANAO: District of Davao, Mount Apo, May, 1909, *Elmer 10607.*

Originally described from material collected in the vicinity of Manila by Gaudichaud-Beaupré, on the occasion of the visit of the French vessel "Bonite" to that port, and deposited in the herbarium of the Museum of Paris.

HYMENOCHAETE CACAO Berk. Jour. Linn. Soc. Bot. **10**: 333. 1869.

Stereum cacao Berk. Jour. Bot. & Kew Gard. Misc. **6**: 169. 1854.

LUZON: Subprovince of Ifugao, Payauan, January 26, 1913, *R. C. McGregor, Bur. Sci. 20038;* Province of Nueva Ecija, Cabanatuan, September, 1908, *R. C. McGregor, Bur. Sci. 5250;* Province of Bataan, November, 1909, *H. M. Curran, For. Bur. 19209.* MINDANAO: District of Davao, March, 1904, *Copeland 495, 523;* District of Zamboanga, Zamboanga, January, 1908, *Whitford & Hutchinson, For. Bur. 9269, 9296.*

This species is of very general tropical distribution.

HYMENOCHAETE NIGRICANS (Lév.) Pat. Bull. Soc. Myc. France **23**: 75. 1907.

Thelephora nigricans Lév. Ann. Sci. Nat. Bot. III. **2**: 212. 1844.

Stereum nigricans Sacc. Syll. Fung. **6**: 561. 1888.

NEGROS: Province of Negros Oriental, Dumaguete, April, 1908, *Elmer 9851.*

Previously reported from Cochin China.

HYMENOCHAETE RHEICOLOR (Mont.) Lév. Ann. Sci. Nat. Bot. III. **5**: 211. 1846.

Stereum rheicolor Mont. Ann. Sci. Nat. Bot. II. **17**: 23. 1842.

LUZON: Province of Laguna, Mount Maquiling, February, 1912, *P. W. Graff, Bur. Sci. 15948.*

Collected previously in the East Indies and French Guiana.

HYMENOCHAETE TENUISSIMA Berk. Jour. Linn. Soc. Bot. **10**: 333. 1869.

Stereum tenuissimum Berk. Jour. Bot. **6**: 510. 1847.

LUZON: Province of Tayabas, Lucban, May, 1907, *Elmer 7548.*

Previously reported from the island of Ceylon.

STEREUM Persoon

STEREUM BELLUM Kunze, Flora **13**: 370. 1830.

MINDANAO: District of Davao, Todaya, April 26, 1904, *Copeland 1294,* on a decaying log.

Previously collected in the Madeira Islands.

STEREUM CONCOLOR Berk. Hook. Flor. Tasm. 259. 1860. Not *Stereum concolor* (Jungh) Sacc., 1888.

LUZON: Province of Tayabas, Lucban, May, 1907, *Elmer 8166*, on dead and decaying branches.

Described from material collected in Tasmania.

STEREUM CRENATUM Lév. Ann. Sci. Nat. Bot. III. **2**: 210. 1844.

MINDANAO: District of Zamboanga, San Ramon, May, 1904, *Copeland 763*, on a root clump of living *Cocos nucifera* L.

Previously collected in the island of Java.

STEREUM INVOLUTUM Klotz. Linnaea **7**: 499. 1832.

NEGROS: Province of Negros Occidental, Mount Canlaon, September, 1909, *H. M. Curran*, *For. Bur. 13738*. MINDANAO: District of Davao, Davao, April, 1904, *Copeland 1294*.

Previously collected in Mauritius.

STEREUM LUGUBRE Cooke, Grevillea **12**: 85. 1884.

LUZON: Province of Rizal, Bosoboso, July, 1906, *M. Ramos*, *Bur. Sci. 1203*. LEYTE: Dagami Panda, September 5, 1913, *Wenzel 3*.

Collected previously in New Zealand.

STEREUM OSTREA (Bl. & Nees) Fr. Epicr. Myc. 547. 1838.

Thelephora ostrea Bl. & Nees, Fung. Java 13. *pl. 2, f. 1.* 1826.

LUZON: Province of Benguet, Pauai, June, 1909, *R. C. McGregor*, *Bur. Sci. 8709*, at an altitude of 2,100 m.

Found in Malacca and Java, and probably distributed throughout Malaya in general.

STEREUM OSTREA var. CONCOLOR (Jungh.) Bres. Hedwigia **53**: 76. 1912.

Thelephora concolor Jungh. Fung. Java 38. 1826.

Thelephora lobata Kunze, Linnaea **5**: 527. 1830.

Stereum lobatum Fr. Epicr. Myc. 547. 1838.

Stereum perlatum Berk. Lond. Jour. Bot. **1**: 153. 1842.

Stereum concolor Sacc. Syll. Fung. **6**: 561. 1888. Not *Stereum concolor* Berk., 1860.

LUZON: Province of Rizal, Bosoboso,July, 1906, *M. Ramos, Bur. Sci 1210;* Palawan, Mount Pulgar, May, 1911, *Elmer 13057.* MINDANAO: District of Davao, Mount Apo, May, 1909, *Elmer 10556.*

This appears to be a case where the variety is much more widely known than the species. It is certainly much the commoner in the Philippines. While the species, so far as is at present known, seems to be quite rare in the Islands, the variety is one of the most common of this group of plants. The three collections enumerated above indicate range rather than prevalence. Berkeley's species, *Stereum perlatum,* was originally described from Philippine material.

Reported from the West Indies, Guiana, Brazil, Cochin China, Sumatra, and generally throughout the East Indies.

STEREUM PRINCEPS (Jungh.) Lév. Ann. Sci. Nat. Bot. III. **2**: 210. 1844.

Thelephora princeps Jungh. Fl. Crypt. Java 39. 1838.

Stereum scytale Berk. Jour. Bot. & Kew Gard. Misc. **6**: 170. 1854.

Stereum contrarium Berk. Jour. Linn. Soc. Bot. **16**: 52. 1878.

POLILLO: October–November, 1909, *R. C. McGregor, Bur. Sci. 10547.* MINDANAO: District of Davao, Mount Apo, June, 1909, *Elmer 11006.*

Collected previously in Cuba, Brazil, Japan, Java, and northern India.

STEREUM SPECTABILE Klotz.; Meyen, Nov. Act. Acad. Nat. Cur. **19**: Suppl. 1. 238. *pl. 5, f. 2.* 1843.

Stereum radiato-fissum Berk. & Br. Trans. Linn. Soc. II. **2**: 63. *pl. 14, f. 8–11.* 1883.

Stereum luzoniense Ricker, Philip. Jour. Sci. **1**: Suppl. 283. 1906.

LUZON: Province of Bataan, summit of Mount Mariveles, on prostrate logs, October, 1903, *Merrill 3531* (type of *Stereum luzoniense*); Province of Laguna, Calauan, December 7, 1910, *R. C. McGregor, Bur. Sci. 12520.*

Ricker's species must be combined with *Stereum spectabile,* as a synonym, the two proving, on a careful comparison of the type material of *Stereum luzoniense* with authentically named specimens of the former, to be identical.

Besides being found in the Philippines, this species has been reported from Australia and Mauritius.

CLADODERRIS Persoon

CLADODERRIS ELEGANS (Jungh.) Fr. Fung. Nat. 21. 1848.

Cymatoderma elegans Jungh. Ann. Sci. Nat. Bot. II. **16**: 320. 1841.

LUZON: Province of Rizal, Bosoboso, July, 1906, *M. Ramos, Bur. Sci. 1189*. MINDANAO: Subprovince of Butuan, March–July, 1911, *Weber 1283*.

This species shows a considerable tendency toward a transition into *Cladoderris infundibuliformis*. So far, however, not enough comparative material has been obtained to enable one to state definitely whether this is a general condition or that the few specimens showing the similarity are exceptional.

Collected previously in South Africa and the East Indies.

CLADODERRIS INFUNDIBULIFORMIS (Klotz.) Fr. Fung. Nat. 21. 1848.

Actinostroma infundibuliformis Klotz.; Meyen, Nov. Act. Acad. Nat. Cur. **19**: Suppl. 1. 237. 1843.

Cladoderris Blumei Lév. Ann. Sci. Nat. Bot. III. **2**: 213. 1844.

Cladoderris Decandolleana Lév. Ann. Sci. Nat. Bot. III. **2**: 214. 1844.

LUZON: Province of Rizal, Bosoboso, July, 1906, *M. Ramos, Bur. Sci. 1184*.

Cladoderris Blumei Lév., described from Javan material in Blume's herbarium and Philippine material in Delessert's herbarium, should unquestionably be placed as a synonym of *C. infundibuliformis*.

Collected previously by Meyen, between 1830 and 1832, in the vicinity of Manila. The fungus has been also collected in Java, South Africa, and Brazil.

HYMENOLICHENES

CORA Fries

CORA GYROLOPHIA Fr. Epicr. Myc. 556. 1838.

Gyrolophium aeruginosum Kunze; Krombh. Consp. Fung. *pl. 5, f. 16*. 1821.

LEYTE: Dagami Panda, September 8, 1913, *Wenzel 5*, growing in the moist forest at an altitude of 60 m., on tree ferns.

Previously collected in Mauritius.

CORA PAVONIA (Web. & Mohr) Fr. Epicr. Myc. 556. 1838.

Thelephora pavonia Web. & Mohr, Beitr. Naturk. **1**: 326. 1805.

LUZON: Province of Benguet, vicinity of Baguio, May, 1911, *C. B. Robinson, Bur. Sci. 14107.*

Collected previously in the West Indies and other parts of the American tropics.

CLAVARIEAE

LACHNOCLADIUM Léveillé

LACHNOCLADIUM FLAGELLIFORME (Berk.) Cooke, Austr. Fungi 179. 1892.

Clavaria flagelliformis Berk.; Hooker, Fl. New Zeal. 186. 1855.

MINDANAO: District of Davao, Mount Apo, May, 1909, *Elmer 11301.*

Described from material collected in New Zealand. As yet reported only from these Pacific regions.

LACHNOCLADIUM USAMBARENSE P. Henn. Bot. Jahrb. **29**: 44. 1904.

MINDORO: Bulalacao, August–September, 1906, *Bermejos, Bur. Sci. 1553.*

Previously known only from East Africa.

PHYSALACRIA Peck

PHYSALACRIA ORINOCENSIS Pat. Bull. Soc. Myc. Fr. **1**: 41. *pl. 13, f. 2.* 1884.

LUZON: vicinity of Manila, October, 1912, *Merrill*, on decaying bamboo stalks.

This interesting little species of "Bubble Cap" has also been collected by the writer in Manila, where it was growing in profusion on bamboo joints which were being used for flower pots. Being used for seedling plants and cuttings, these pots were kept constantly moist and in a shady place so that they formed an ideal substratum for a fungal growth.

Collected previously in tropical America.

HYDNEAE

IRPEX Fries

IRPEX FLAVUS Klotz. Linnaea **8**: 488. 1833.

Polyporus flavus Jungh. Flor. Crypt. Java 46. 1838.

NEGROS: Gimagaan River, January, 1904, *Copeland 26*, on decaying wood.

Coriolopsis melleoflavus Murr. (Bull. Torrey Club **35**: 393. 1908) is not a synonym for this species as stated by Bresadola (Hedwigia **53**: 75. 1912) but belongs rather among the numerous synonyms of *Polystictus cervino-gilvus* (Jungh.) Fr. For this arrangement see Graff (Philip. Jour. Sci. **9**: Bot. 239. 1914).

Collected in North America, Java, and the East Indies. When further known the species will, in all probability, be found to grow in the American tropics as well.

POLYPOREAE

POLYPORUS (Micheli) Fries

POLYPORUS ADUSTUS (Willd.) Fr. Syst. Myc. **1**: 363. 1821.

Boletus adustus Willd. Fl. Berol. Prod. 392. 1787.

Polyporus carpineus Sowerb. Engl. Fungi *pl. 231.* 1799.

Polyporus crispus Fr. Obs. Myc. **1**: 127. 1815.

Polyporus pallescens Fr. Syst. Myc. **1**: 369. 1821.

Boletus isabellinus Schw. Schr. Nat. Ges. Leipzig **1**: 96. 1822.

Polyporus subcinereus Berk. Ann. Mag. Nat. Hist. II. **3**: 391. 1839.

Polyporus Halesiae Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 434. 1853.

Polyporus Lindheimeri Berk. & Curt. Grevillea **1**: 50. 1872.

Bjerkandera adusta Karst. Medd. Soc. F. et Fl. Fenn. **5**: 38. 1879.

Myriadoporus adustus Peck, Bull. Torrey Club **11**: 27. 1884.

Polyporus Burtii Peck, Bull. Torrey Club **24**: 146. 1897.

MINDANAO: District of Davao, Mount Apo, April 20, 1904, *Copeland 1075;* Lake Lanao, Camp Keithley, July, 1907, *Mary S. Clemens.*

A fungus of very general distribution.

POLYPORUS ATYPUS Lév. Ann. Sci. Nat. Bot. III. **2**: 184. 1844.

Trametes aurora Ces. Myc. Borneo 5. 1879.

Coriolus atypus Pat. Tax. Hymén. 94. 1900.

Polystictus atypus Bres. & Syd. Philip. Jour. Sci. **9**: Bot. 348. 1914.

MINDORO: Puerto Galera, June, 1912, *P. W. Graff, Bur. Sci. S30*, growing on dead branches.

Previously collected in Java and Borneo.

POLYPORUS BENGUETENSIS (Murr.) Graff, Philip. Jour. Sci. **9**: Bot. 236. 1914. [PLATE 15, FIG. 1].

Coltricia benguetensis Murr. Bull. Torrey Club **35**: 391. 1908.

Polystictus benguetensis Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 321. 1912.

LUZON: Province of Benguet, Baguio, October–November, 1905, *Merrill 5003* (type of *Coltricia benguetensis* Murr.); same locality, March, 1904, *Elmer 6047*—both collections from prostrate logs of *Pinus insularis* Endl.

Upper surface and pore layer of the same shade of brown and quite distinct in color from the flesh of the pileus which is a shining golden yellow-brown when broken. The characteristics are so distinct that its place in the genus *Polyporus* cannot be questioned.

As yet, only collected in the Philippines.

POLYPORUS LUZONENSIS (Murr.) Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 266. 1912.

Spongipellis luzonensis Murr. Bull. Torrey Club **34**: 473. 1907.

LUZON: Province of Bataan, Mount Mariveles, November, 1904, *Elmer 6944*, on dead wood.

Described from Philippine material and, so far, not reported from elsewhere.

FOMES Fries

FOMES ALBOMARGINATUS (Lév.) Sacc. Syll. Fung. **6**: 185. 1888.

Polyporus albomarginatus Lév. Ann. Sci. Nat. Bot. III. **2**: 191. 1844.

Polyporus kermes Berk. & Br. Jour. Linn. Soc. Bot. **14**: 49. 1875.

Polyporus laeticolor Berk. Jour. Linn. Soc. Bot. **16**: 46. 1878.

Fomes pyrrhocreas Cooke, Grevillea **14**: 11. 1885.

Polyporus ochrocroceus P. Henn. Monsunia **1**: 145. 1899.

Pyropolyporus albomarginatus Murr. Bull. Torrey Club **34**: 478. 1907.

MINDANAO: District of Davao, Mount Apo, April 20, 1904, *Copeland 1077*, growing on a fallen log in the forest.

Collected previously in Ceylon, Java, and New Guinea.

FOMES FULLAGERI Berk. Jour. Linn. Soc. Bot. **16**: 54. 1878.

NEGROS: Province of Negros Occidental, Farar, October 8, 1909, *H. M. Curran, For. Bur. 17476*, growing on living *Shorea* sp.

According to the collector's note, the fungus sporophore was growing from a wound, and the fungus had caused a rotting of the heartwood of the tree. The rot is not accompanied by any staining of the wood. It is possible that this fungus may be found to be one of the important timber destroyers of the Philippine Islands.

This fungus has been previously collected in Australia.

FOMES MELANOPORUS (Mont.) Sacc. Syll. Fung. **6**: 196. 1888.

Polyporus melanoporus Mont.; Ramon de la Sagra. Hist. Phys. Polit. Nat. Cuba **9**: 422. 1841.

Polyporus cinereo-fuscus Curt. Trans. Linn. Soc. II. **1**: 124. *pl. 19, f. 1.* 1876.

Fomes melanoporoides Ces. Myc. Borneo 6. 1879.

Fomes cornu-bovis Cooke, Grevillea **13**: 2. 1884.

Nigrofomes melanoporus Murr. Bull. Torrey Club **31**: 425. 1904.

LUZON: Province of Bataan, Mount Mariveles, November, 1904, *Elmer 6959*.

Reported from Cuba, Borneo, Malacca and India.

FOMES MERRILLII (Murr.) Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 287. 1912.

Pyropolyporus Merrillii Murr. Bull. Torrey Club **34**: 479. 1907.

CULION: December, 1902, *Merrill 3575*, on decaying tree trunks near the seashore.

As yet reported only from the Philippines.

FOMES ROSEUS (Alb. & Schw.) Cooke, Grevillea **14**: 21. 1885.

Boletus roseus Alb. & Schw. Consp. Fung. 251. 1805.

Polyporus roseus Fr. Syst. Myc. **1**: 372. 1821.

Polyporus carneus Nees, Nov. Act. Acad. Nat. Cur. **13**: 14. *pl. 3.* 1827.

Polyporus rufo-pallidus Trog, Flora **15**: 556. 1832.

Fomitopsis rosea Karst. Rev. Myc. **3**: 18. 1881.

Fomes carneus Cooke, Grevillea **14**: 21. 1885.

LUZON: Province of Laguna, Mount Maquiling, April, 1913, *P. W. Graff*; *Bur. Sci. 21042*, on a prostrate log near the trail at an altitude of 150 m.

Previously collected in North, Central and South America, Europe, Australia and Java. In the Americas its habitat is confined to the tropical and warmer temperate portions. In all probability Africa will be added to this list in the course of time and the species will be found to be of universally tropical distribution.

POLYSTICTUS Fries

POLYSTICTUS ABIETINUS (Dicks.) Fr. Syst. Myc. **1**: 370. 1821.

Boletus abietinus Dicks. Plant. Crypt. Brit. **3**: 21. *pl. 9, f. 9.* 1793.

Polyporus incarnatus Schum. Enum. Plant. Saell. **2**: 391. 1803.

Sistotrema violaceum Pers. Syn. Fung. 551. 1808.

Polyporus dolosus Pers. Myc. Eur. **2**: 77. 1828.

Coriolus abietinus Quél. Enchir. Fung. 175. 1886.

LUZON: Bontoc Subprovince, February–March, 1911, *Vanoverbergh 1117*, on the bark of *Pinus insularis* Endl.

Found in northern North America, Cuba and Europe.

POLYSTICTUS PERPUSILLUS (Murr.) Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 319. 1912.

Coriolus perpusillus Murr. Bull. Torrey Club **35**: 396. 1908.

MINDANAO: District of Davao, Lake Lanao, Camp Keithley, July, 1907, *Mary S. Clemens.*

Reported only from the Philippines.

POLYSTICTUS RUBRITINCTUS (Murr.) Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 320. 1912.

Coriolus rubritinctus Murr. Bull. Torrey Club **35**: 396. 1908.

MINDORO: Mount Halcon, November, 1906, *Merrill 6117.*

As yet collected only in the Philippines.

POLYSTICTUS TABACINUS Mont.; Gay, Hist. Fisica Pol. Chili **7**: 361. *pl. 7, f. 6.* 1845.

Polyporus tabacinus Mont. Ann. Sci. Nat. Bot. II. **3**: 349. 1835.

Polyporus spadiceus Jungh. Flor. Crypt. Java 54. *pl. 30.* 1838. Not *P. spadiceus* Berk.

Polystictus microcyclus Zipp.; Léveillé, Ann. Sci. Nat. Bot. III. **2**: 188. 1844.

Polystictus spadiceus Fr. Nov. Symb. Myc. 1851.

Polystictus xerampelinus Kalchbr. Grevillea **4**: 72. 1876.

Cycloporellus microcyclus Murr. Bull. Torrey Club **34**: 468. 1907.

Polystictus substygius Bres. Hedwigia **53**: 66. 1912.

Cyclomyces spadiceus Pat. Philip. Jour. Sci. **10**: Bot. 95. 1915.

Cyclomyces tabacinus Pat. Philip. Jour. Sci. **10**: Bot. 95. 1915.

LUZON: Province of Laguna, Mount Maquiling, February, 1912, *P.W. Graff*, *Bur. Sci. 15956, 15981.*

Originally described from material collected in Juan Fernandez, later from material collected in Chili, New Zealand and Java.

POLYSTICTUS TABACINUS var. **barbatus** (Murr.) comb. nov. [PLATE 15, FIG. 2.]

Cycloporellus barbatus Murr. Bull. Torrey Club **35**: 397. 1908.

Polystictus barbatus Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 321. 1912.

Polystictus spadiceus var. *barbatus* Graff, Philip. Jour. Sci. **9**: Bot. 242. 1914.

LUZON: Province of Zambales, November–December, 1907, *H. M. Curran & M. L. Merrit*, *For. Bur. 8208* (type of *Cycloporellus barbatus* Murr.).

As yet this variety has only been collected in the Philippine Islands.

POLYSTICTUS TABACINUS var. **substygius** (Berk. & Br.) comb. nov.

Fomes substygius Berk. & Br.; Cooke, Praec. Polyp. *522.*

Fomes spadiceus var. *halconensia* Bres. Hedwigia **53**: 59. 1912.

LUZON: Province of Rizal, February, 1911, *M. Ramos*, *Bur. Sci. 13467;* Mindoro, Mount Halcon, November, 1906, *Merrill 6114* (var. type).

There are two varieties of *Polystictus tabacinus*, which represent two different sorts of development and variation from the type. The first variety, *barbatus*, does not vary in pilear texture but in the fact that the upper surface is covered with a long tomentum, and has a somewhat darker shade of color. This tomentum varies in length from short, at the outer margin, to about 3 mm., near the place of attachment of the fungus.

In the case of the second variety, *substygius*, the variation is one of which insufficient notice has been taken; namely, a tendency toward the assumption of a perennial development in an occasional species, which is typically annual, when growing under the warm conditions of a tropical climate. This second variety has developed in this manner. The context of the plant develops much thicker and harder than normally. The upper surface loses its characteristic velvety tomentum, becoming hard and smooth. Otherwise than this the plant retains its usual characters. To one unfamiliar with the variations through which this plant may pass the natural tendency would be to place it in the genus *Fomes*. While pore layers have been occasionally observed in this variety they are the exception rather than the rule.

Fomes spadiceus (Berk.) Cooke is not this species, but a quite distinct plant.

Reported from Samoa, the Philippines, Malacca, and the East Indies.

TRAMETES Fries

TRAMETES ELMERI (Murr.) Graff, Philip. Jour. Sci. **9**: Bot. 243. 1914.

Tyromyces Elmeri Murr. Bull. Torrey Club **34**: 475. 1907.

Polyporus Elmeri Sacc. & Trott.; Saccardo, Syll. Fung. **21**: 279. 1912.

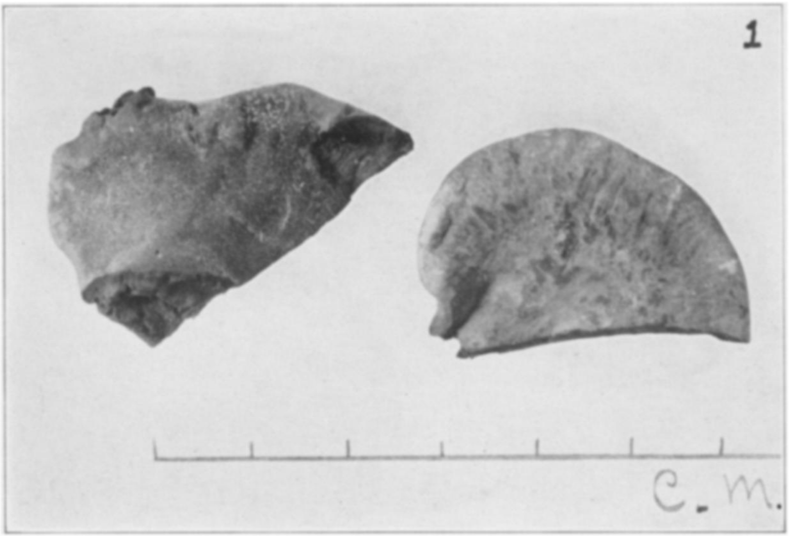
LUZON: Province of Bataan, Mount Mariveles, November, 1904, *Elmer 6954*, on dead wood.

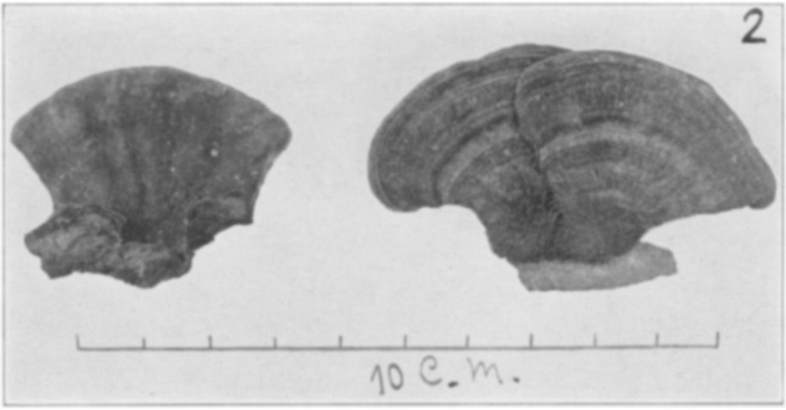
The generic characters of this fungus are those of *Trametes* rather than *Polyporus*. Saccardo evidently made the change on general principles rather than after a critical study of the species.

As yet collected only in the Philippines.

TRAMETES INSULARIS Murr. Bull. Torrey Club **35**: 405. 1908.

LUZON: Province of Benguet, Baguio, April, 1909, *R. C. McGregor, Bur. Sci. 8311*, on *Pinus insularis* Endl.





1. POLYPORUS BENGUETENSIS (MURR.) GRAFF
2. POLYSTICTUS TABACINUS VAR. BARBATUS (MURR.) GRAFF

The limited distribution of pines makes this fungus very local in the Islands. As this is but the second collection which has been made to date, this form must be rare even in the pine regions.

Not reported outside the Philippine Islands.

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Explanation of plate 15

FIG. 1. *Polyporus benguetensis* (Murr.) Graff. Specimen from the herbarium of the Bureau of Science, Manila, *Merrill 5003*, co-type material of *Coltricia benguetensis* Murr.

FIG. 2. *Polystictus tabacinus* var. *barbatus* (Murr.) Graff. Specimen from the herbarium of the Bureau of Science, Manila, *Curran & Merritt, For. Bur. 8208* co-type of *Cycloporellus barbatus* Murr.